COMMUNICATIONS
WORLD
incorporating NETWORK

ISSN: 0817-1904 The newspaper of data & telecommunications for planners and managers May 1989

OTC aims to be one-stop shop

Benefits seen for customers in purchase of 50 per cent of Infolink Network

By Noel Bennett

SYDNEY — OTC, aiming to become a "one-stop shop" for its customers, has bought a 50 per cent interest in Infolink Network Pty Ltd.

OTC is only concerned with using Infolink Network's Value Added Services (VAS) facilities for providing a delivery mechanism within Australia, but the parent of Infonet Network, the Infolink Group, has very strong ambitions outside Australia.

David Knox, general manager of Australian operations of Infolink Group, said the OTC deal would provide valuable revenues and so provide a firm base for opportunities in the Asian/Pacific region.

On the other hand, Gary Donald, seconded from OTC as acting chief executive of Infolink Network, said OTC was not intending to go outside Australia with this particular investment at this stage.

In any case, such a venture would fall within the ambit of OTC International.

Donald said technology had reached a stage where it was necessary to specialise in providing customer-based solutions and there was more than enough work of this kind in Australia.

The investment would guarantee stability of network operations for OTC customers who required an Australian-based service — such as the Australian Customs Service for whom OTC had established an EDI operation.

The venture would build upon other arrangements made with Computer Power in establishing a top consultancy in computers and telecommunications; with British Telecom covering switching, electronic mail and data bases; and the National Engineering Information Services (NEIS) for the development of product covering the import/export industries.

Infolink Network Pty Ltd, a subsidiary of the Infolink Group, was formed when the group acquired Mayne Nickless Ltd's commercial computing subsidiary, Mayne Nickless Computer Services.

The network provides value-added data network services to corporations, financial institutions and governments.

Customers include the Department of Industrial Relations, Hertz Rent-a-Car and Mayne Nickless Ltd for its international business communications.

Anthony Gould, chief executive of Infolink Group, said there was enormous global growth potential for commercial facilities in the data communications market as businesses were continually increasing efficiency and demanding more and more cost-effective data distribution.

The joint venture with OTC would provide the Infolink group with "immense" opportunities in the Asian/Pacific Region as well as in Australia and the rest of the world.

Anthony Gould . . . sees growth

Gould said that Infolink Asia, through the group's influential Thai and Indonesian shareholders, was establishing joint ventures to market data networking facilities in those countries.

Infolink Network would provide facilities both to the Infolink Group and to OTC for each to deliver a range of VASs, including electronic mail, EDI and information services.

Nortel plans 'centre of excellence' for Sydney

SYDNEY — Northern Telecom intends to make its operations here a "centre of excellence" for the Australasian and Asian markets and at the same time, the large Canadian communications equipment manufacturer has cut its financial ties with AWA Ltd.

Northern Telecom has bought, for an undisclosed sum, the 40 per cent ownership that AWA held in the joint venture, AWA-Nortel Pty Ltd.

The venture was formed in December 1986, two years after Northern Telecom signed AWA as distributor of Northern Telecom's Meridian SL-1 digital PABX in Australia.

Northern Telecom World Trade's managing director of Northern Telecom (Asia) Ltd, Brian Baynes, said the decision to acquire AWA's holding was "logical" from both companies' perspectives.

While Northern Telecom's networking activities had driven the company into the data packet and international gateway business in Australia, AWA was concentrating on transmission technology and communications systems engineering, he said.

Baynes said Australia was one of Northern Telecom's strategic markets and would provide a platform to drive further into the Asian market.

The decision to establish its own identity was part of Northern Telecom's strategy to shift its core business from the manufacture of hardware to the provision of sophisticated, intelligent networking solutions, he said.

AWA-Nortel's customers include the Sydney Opera House, the State Bank of NSW, Ansett Airlines, Australian Airlines, National Mutual and Queensland Rail.

Recently, Northern Telecom won multi-million dollar contracts to supply Telecom Australia's Austpack service with its DPN family of data packet switching systems. It has also provided a DMS-300 international gateway switching system in Perth for OTC.

Keysystems supplier ready to do battle

By Noel Bennett

SYDNEY — Chris Saines is eagerly and confidently looking forward to July 1 when Customer Premises Equipment (CPE) is deregulated.

As general manager of Philips Telecommunication and Data Systems, Saines said at a function launching the company's new range of Sopho-K keysystems that flowing from Telecom's long-held monopoly in this marketplace, "customers have had limited choice at inflated prices".

He said that Telecom had held keysystems suppliers at arm's length even though during the past five to seven years, the distinction between PABX and keysystems has become much less distinct.

One of the problems faced by organisations such Telecom in marketing a comparatively low-priced item are their large overheads, Saines said. Philips would be marketing the Sopho-K through a national dealer network which also handled Philips' range of small business exchanges (SBX) and PCs as well as other products.

Philips had taken some 30 per cent of this SBX market with 4,000 systems installed, and expected to achieve the same proportion with the Sopho-K.

The Sopho-K products include:

☐ Sopho-K1 single-line system which is specifically designed to overcome problems of call interruptions and unprofessional call transfer experienced by personnel sharing a single PABX or exchange line.

☐ Sopho-K2 which allows the use of a combination of dedicated terminals or ordinary telephones and can be configured as either a PABX, keysystem or manager/secretary system.

Both the Sopho-K1 and 2 are said to be suitable for home use.

☐ Sopho-K8 which provides up to three exchange lines and eight extensions, Sopho-K12 up to five lines and 12 extensions and Sopho-K24, eight exchange lines and 24 extensions.

Saines predicted that ISDN capability for such systems was only about 18 months away.

But he was also concerned that without restrictions on imports of keysystems, perhaps a licensing arrangement administered by Telecom. Australia could be overrun with imports of cheap but low-quality systems, as had occurred with some brands of telephones when restrictions were lifted.

ISDN dominates vintage year for Telecom's Atug

SYDNEY — ISDN was the hot topic at the Atug 89 conference/exhibition (above) with the three-day April event being preceded by a "full house" one-day ISDN seminar conducted by Atug and Telecom.

The momentum continued during the Atug 89 exhibition with Telecom demonstrating the comprehensive facilities available with this technology and suppliers showing off their products to the best ever attendance — more than 7000 people — at an Atug exhibition.

The excitement engendered by the colourful and wide-ranging exhibition also prevailed during the conference sessions, coming as they did after the introduction of the Telecommunications Bill in Federal parliament, the appointment of the new Minister for Telecommunications and Aviation Support, Ros Kelly, and the naming of the designate chairman of Austel, Robin Davey. All in all, Atug 89 was a vintage year.

CAREERS

Opportunities for careers in network management are discussed on P103 of *Computerworld*.

COM TECH LANs NOVELL!

As if you couldn't tell from the size of the type Com Tech have important news!

We've just landed an official distributorship for Novell, the world's most popular Local Area Network operating systems.

We believe the addition of Novell consolidates Com Tech's position as Australia's most important distributor of LAN products.

For dealer information or the name and number of your nearest dealer phone Com Tech Communications on (02) 317 3088 or fax (02) 693 2629.

COM TECH

NOVELL

Registered trademark of Novell, Inc.

May statement not last word on Telecom

By Noel Bennett

SYDNEY — The 1988 May statement on telecommunications and the associated bills introduced into Federal Parliament in April were not the last word on telecommunications, according to the Minister for Telecommunications and Aviation Support, Ros Kelly.

However, the bills were a major advance in achieving the Government's commitment to modernising and revitalising these key sectors of the Australian economy, she said.

Speaking at Atug 89, Kelly said the legislation had been subjected to exhaustive consultation with all sections of the industry following its release as an exposure draft.

Accordingly, the bill now incorporated significant changes to reflect more accurately the intent of the May 1988 policy statement.

While some people perhaps would have liked a more radical approach, the regulatory legislation contained flexibility to move with new technologies and new opportunities for growth.

Kelly said that with regard to competitive areas, particularly VAS and customer equipment, the pro-competitive safeguards in the bill and Austel's powers had been strengthened significantly

The Government did not intend to foster legalistic processes which could be used to thwart Austel's legitimate decision-making processes, but to ensure those involved received natural justice.

"If the appeals machinery is abused or proves too cumbersome in practice, I will move to amend the legislation as necessary," Kelly said.

"I am committed to ensuring that the Government's intentions for Austel's independence are not diverted."

Kelly said she would expect Austel to report on the implications of allowing a second mobile telephone service operator and the current policy on common interest groups for private networks as matters of priority.

■ *Ros Kelly . . . assurance of 'natural justice'*

Level playing field assured says Davey

SYDNEY — Designate chairman of Austel, Robin Davey, gave comfort to his Atug 89 audience by asserting: "And let me assure you there will be a level playing field."

Heard in his official capacity for the first time, Davey said Austel would, so to speak, be running the boundary between monopoly and competition.

However, Austel would be more than just a linesman, being perhaps the groundsman as the organisations role was to ensure a level playing field existed in those areas where competition was allowed under the Telecommunications Bill.

Robin Davey

In his speech and subsequent answers to questions, Davey stressed heavily that he wanted Austel to be regarded as a facilitator between conflicting parties, rather than a heavy-handed regulator.

Austel's functions were to protect the carriers' monopolies, protect competitors from unfair practices by the carriers, protect consumers from unfair practices, promote carrier efficiency and to ensure safety and quality through technical regulation.

As to protecting the carriers' monopolies, Davey said value added services, (VAS) was open to competition, the trade-off being the carriers' monopoly over reserved services.

However, the opening up of VAS and the freeing of private networks was subject to certain qualifications — the issuing of class licences.

One of the essential conditions of that licence would be to protect the carriers' exclusive right to reserved services, but the overall objective was to ensure a fair and efficient market.

However, the usual Trade Practices and Consumer Protection laws would still apply, subject to some clearly defined exceptions.

Telecom's operation of its community service obligations would also be scrutinised and Davey said he would meet consumer groups and similar organisations to form an advisory committee to assist Austel in protecting consumers.

In promoting carrier efficiency, Austel would be reporting to the minister on how carriers supplied their reserved services and their adequacy and quality.

Davey said that notwithstanding some commenators' claims to the contrary, Austel would have the guns, the fire power, to ensure that it could safeguard a market.

OLEX – MAKING LIGHT WORK

OLEX
OPTICAL NETWORKS

Do you need a cable that is:

- **small and lightweight**
- **free from electrical interference**
- **secure against tapping**
- **easy to terminate**
- **cost competitive and**
- **has a high data rate capability**

Then, consider Olex optical fibre cable.

Olex, a division of Pacific Dunlop Limited, has been in the communications business since 1943 and is a world leader in the design of optical fibre cable.

Olex also provides systems design, installation and training, thereby providing a total (turnkey) solution.

Call Olex now to find out how you can benefit from Australia's leading fibre optic specialist.

Olex: Victoria (03) 316 2222; New South Wales (02) 648 5100; South Australia (08) 268 3266; Queensland (07) 265 2666; Western Australia (09) 353 1122; ACT (062) 80 4677; Tasmania (002) 34 4811.

Global Communications.

Striking the Balance.

The need for a common communications network language has opened the doors to uniform Global Communications.

However, this benefit can only be realised when you balance Standards with your company's unique operational requirements.

Scitec has a range of networking products that offers you adherence to the OSI-X.25 Standards and the flexibility to vary compliance with the relevant protocol, allowing you to fine tune your network.

The result is greater power and flexibility of your network with complete control.

Scitec Communication Systems is the Australian manufacturer providing communication networks to the top 100 companies in Australia, Europe and USA.

Let Scitec help you ''Strike the Balance''.

SCITEC
Global Communications

Scitec Communication Systems Limited (Incorporated in NSW)
Sydney (02) 428 9555, Melbourne (03) 690 8622, Canberra (062) 85 1844, Brisbane (07) 371 9122,
Perth (09) 324 1599, Adelaide (08) 364 0233, Auckland (9) 77 1070

ADM COMMUNICATIONS SC368

Service obligations seen as top priority

By Noel Bennett

SYDNEY — Competition and definition of Telecom's community service obligations (CSOs) were essentially the main subjects of what a new telecommunications framework should be all about, Barney Blundell said at Atug 89.

Speaking on behalf of Atug in response to the new telecommunications legislation, Blundell said Atug was not convinced that the list of monopoly areas granted to Telecom were necessary to support the yet-to-be-costed CSOs.

While Atug would not argue that CSO should not deliver a basic telephone service to rural users, it would not agree that this meant that optic fibres, DDS, ISDN and other facilities should be provided for reasons of the expense involved.

Defining, costing and periodically reviewing the extent of the CSOs and their funding along with a clear financial boundary between monopoly areas should be one of Austel's first tasks, Blundell said.

Accordingly, it was disappointing that neither the minister nor Austel had mentioned or put a time scale on such a review, "pivotal" to the whole legislation.

Further, there were very few pro-competitive provisions in the bill before Parliament to ensure a truly level playing field.

In this context, Austel must direct the carriers to provide VAS competitors with network and statistical information to ensure carriers were not advantaged by having access to basic customer information derived from the reserved services monopoly.

Atug also believed profits from reserved services should not be used to capitalise or finance ongoing operational losses in areas of open competition. While Austel had said that real profits from reserved services could be scrutinised, Atug would have preferred to have this ability incorporated in the bill.

Other "problem" areas included:

☐ The draft private network class licence be made available to ensure it provided the expected coverage.

☐ The reservation of all internal building cabling in multi-tenanted buildings to

(Continued page 6)

AIIA believes Telecomms Bill needs watching

By Loretta Johnson

CANBERRA — The new Telecommunications Bill took 10 months to reach exposure draft stage and is a complex document. Despite the unusually short period the industry was given to analyse it. AIIA has welcomed the considerable improvement apparent in the bill as a result of the amendments suggested by industry.

The legislation now before Parliament is best understood as a reform package made up of three Acts, aimed at revising and improving the structure of government business enterprises as well as establishing a new competitive environment.

The Telecommunications Bill contains key regulatory changes which AIIA hopes will facilitate increased competition in the VAS and CPE areas.

Combined with the establishment of Austel, these regulatory reforms are aimed at specific policy objectives including efficient and economic supply of standard telephone services, optimal expansion rates for the national telecommunications network and promotion of all sectors of the economy through commercial supply of modern telecommunications services.

Inconsistencies

It remains to be seen whether this legislative framework can assist in meeting these objectives. With some exceptions. AIIA believes the Government has presented industry with a sound basis on which to build an administratively simple and workable regulatory structure. Much will depend on its implementation.

There is a persuasive argument that any legislative framework which attempts to promote competition while setting up price control mechanisms is doomed to failure; the concepts are not generally compatible.

It should be recognised, however, that the policy environment surrounding this legislation is responsible for many of the inconsistencies and apparent shortcomings of the bill.

The concept of promoting fair and efficient competition and market conduct is not given as much prominence in the bill as the industry had hoped, particularly in light of the "flavour" of competition promotion, which was evident in the May economic statement last year.

The role of Austel in this area will be relevant to the successful balancing of competition policy and monopoly services provision. AIIA is committed to assisting and support-

(Continued page 7)

We've had Networking sewn-up for years

INFOLINK NETWORK

Infolink Network is a fully featured, packet switching network service with connections throughout Australia, and throughout the world. As Australia's largest value added data network service, we support any level of user from the smallest home-based operation to the largest multinational corporation.

With Infolink Network, you can be sure of an efficient flow of information and the best technology the market has to offer. Our electronic mail and value added services are just two of the features that create a world class network service. And Infolink Network security and reliability are second to none in Australia.

Whether you are just setting up your data links or have a network in place, talk to the experts at Infolink. We have the cost effective solution for your business. We offer a complete service backed by over ten years of experience in providing network services to Australian businesses, large and small.

Call us today for more information

Sydney	(02) 318 9333
Melbourne	(03) 699 1999
Brisbane	(07) 891 5494

Infolink
COMPUTER SERVICES PTY LTD
A member company of the Infolink Group Limited

(Continued from page 5)

Telecom, unless a common PABX was shared, needed to be reviewed and clarified.

☐ The boundary between reserved services, private network services and VAS remained a "moving target" and service delivery standards should be circulated to allow a considered response.

☐ Atug believed the automatic reservation of new mobile services such as Telepoint CT2 was "totally unacceptable" and contrary to the May 1988 telecommunications direction statement.

Any possible relief could only be through amendment to the legisation, which could be a protracted affair.

Service seen as priority

☐ Atug called upon Austel to remove the anomaly surrounding connection of privately supplied and maintained radio links to the public switched telephone network as soon as possible.

☐ An organisation should be authorised to provide services to those areas where Telecom did not want to participate.

Blundell also said the funding set aside for Austel and its staffing arrangements were the absolute minimum if the organisation was going to be effective and, more importantly, "uncapturable" by any of the participants in the telecommunications debate. By this was meant not needing to rely on secondments from the carriers.

As a general comment, Blundell said the fact that a number of ongoing suggested reviews required future legislative changes was "worrying" as such changes would become subject to political football and long delays would occur before amendments were processed.

Finally, in making these points, Blundell said Atug did so in a continuing spirit of co-operation to ensure Australians enjoyed the benefits of a modern expanding and innovative telecommunications service.

"The best-engineered Multi-Channel Boards on the market today."

SCO XENIX
SUN O/S 386i
PC-MOS
VENIX
OS/2

INTERACTIVE UNIX
CONCURRENT DOS
PICK
QNX
MS/DOS
PC/DOS

DigiBoard
Plugging you into tomorrow

Distributed by

Stanilite

The Multi-Channel/Multi User adapters with more software compatibility than any other Multi-user sub-system

Stanilite Electronics Pty Ltd
INC. IN NSW

UNIX/XENIX HOTLINE (008) 22 4537 OR (02) 646 4011 FAX (02) 649 7522

EDI calls for a net supplier

By Noel Bennett

SYDNEY — Those embarking on Electronic Data Interchange (EDI) should enlist the services of a network supplier rather than going it alone, according to Michael Baker, chief executive officer of the EDI Council of Australia.

Almost without exception, any EDI system that went ahead without a supplier had ended up by enlisting such services, he said.

Baker said in his paper, *Whatever Happened to the Paperless Office?*, presented at Atug 89, that some issues, such as standards and improved communications technology, could cause organisations to defer EDI implementation.

However, standards should not be a big issue if a reputable supplier of translation software was chosen, committed to supporting the present ANSI X.12 standards as well as the emerging EDIFACT standards. This support should include the remapping of documents when compliance with the emerging standard was required.

Similarly, the variety of communications — such as X.25, X.28, X.400, ISDN or third party providers — should only concern the communications experts as the business issues of paperless trading would remain independent of the technology.

Planning

Taking a large US conglomerate as an example, Baker said findings showed there were substantial net costs at the beginning of the transition to EDI, countered by substantial and continuing net savings about three years into the planned five-year cycle. However, savings could not be made without these intitial costs.

Baker stressed the importance of planning to realise the competitive benefits which EDI could offer.

Successful implementation depended upon education, strategic planning, pilot studies and post-pilot expansion.

Education, driven by top management, required the participation of all those departments affected, whether immediately or only in the longer term. The associated expenditure was imperative to obtain a committed and enthusiastic workforce.

Strategic planning should analyse the business opportunities, present costs, present systems, projected changes to the systems and anticipated costs. A complete strategy should also include legal issues, technical constraints, implementation strategies, trading partners and document selection.

Baker said at this stage the company should speak with its trading partners to ensure that mutual EDI efforts were harmonised.

In the pilot implementation, the exercise would not be to ascertain whether EDI worked — that question had been settled by some 10,000 companies worldwide using electronic transactions. Rather, the study would determine whether EDI worked for the particular company and if not, why not. This process should involve choosing equipment, finding a network supplier and feeding this experience back into the strategic plan.

Post-pilot expansion should involve the full integration of EDI into human and computer systems as well as other types of transactions with trading partners, whose numbers might be expanded upon, said Baker.

Editorial

The battle is not over

The communications industry is the engine of an everyday, increasingly heard complaint — information overload. But within the industry itself, the unprecedented speed of change is also posing the problem of digesting the onrush of new developments.

ISDN, LANS, WANS, satellite communications in all their complexities are but a few of the available alternatives thrust before management.

With the Telecommunications Bill now before Parliament, many members of the organisations which fought so strenuously to ensure the bill reflected their wishes may consider the battle has been won.

To keep on top of the legislation, understand what it means, determine the implications for the future operations of an organisation is just hard work.

However, the legislation contains many unresolved issues. It would be a matter of regret now if members did not keep on fully supporting their respective organisations to ensure that the telecommunications framework works effectively for the good of all Australians, information overload not withstanding.

— Noel Bennett

COMMUNICATIONS WORLD

Publisher: Susan Taylor
Editor: Noel Bennett
Contributors: Richard Buckle, Stephen Coates, and IDG reporters
Production Editor: David Blackburn
Managing Editor: Michael Harrison

ADVERTISING:
National Advertising Manager: Gayle McElroy
Co-ordinator: Cheryl Podda

Display
New South Wales: Peter Tichband, Simon Anderson
Victoria: Terry Swan, Tania Evans
Queensland: Jane Fewings (07) 378 4522
Western Australia and South Australia: Winkie Corfield (09) 388 1828

Recruitment/classified
National Manager: Stuart Williamson
NSW, Queensland and NT: Pat Blackman
Victoria and South Australia: Greg Doyle

CIRCULATION:
Manager: Shirley Ingram
Supervisor: Dorothy Adams

PRODUCTION:
Manager: Max Jaeger
Supervisor: Terry Barnes
Managing Director: Alan Power
Directors: Patrick J McGovern, Alex Leblois
General Manager: Barbara Howell

Communications World is published monthly by IDG Communications Pty Ltd and inserted as a pullout in *Computerworld Australia*. Copyright 1989 by IDG Communications Pty Ltd. Reproduction of material appearing in *Communications World* is strictly forbidden without written permission.

Communications World is printed by Offset Alpine Pty Ltd

AIIA believes Telecomms Bill needs watching

(Continued from page 5)

ing Austel in the discharge of its responsibility and initial indications are that Austel will take a pro-active and positive role in encouraging competition.

As was indicated in the May statement, certain services have been reserved to the carriers for monopoly provision. The policy intent behind this decision is not, for the moment, open to further debate. Its practical implementation presents some concerns for the industry.

It may be that the definition of reserved services, and the approach to the network boundary, has the effect of causing certain services on the customer's side of the first interface point to be reserved services.

AIIA believes this may be contrary to the Government's original intention. Until the VAS-class licence is made available it is difficult to guage how much of a concern this issue will be.

Crucial factor

Further, a complete understanding of the generic characteristics of a reserved service remains dependent on regulations, yet to be drafted, which will determine functions necessary (or not necessary) to meet the threshold definition of a reserved service. It is to be hoped these regulations do not create internal inconsistencies in this critical part of the legislation.

A particularly crucial factor in the successful liberalisation of the telecommunications industry is the extent to which VAS will become more competitive, thus facilitating the development of an innovative and expert-orientated sector.

Overlaying this important area with a cumbersome licensing mechanism is not the best way to ensure industry growth and development.

The class licence approach is, of course, one which AIIA has long supported. However, its success depends on simplicity, especially from an operational point of view.

The current maze of licensing provisions appears daunting, and in parts unnecessary, but of more concern is the potentially limiting nature of the VAS licensing principle, pursuant to which Austel must decide whether or not to grant a licence to a VAS supplier.

As with other sections of this bill, the application of this provision can, and hopefully will, be considerably influenced by the prevailing positive attitude of the Government towards promoting rather than restricting fair competitive behaviour.

- *Loretta Johnson is manager, telecommunications and government purchasing policies, AIIA*

At last, integration without disintegration.

Up until now, an integrated voice and data communication system for your office virtually meant disintegrating your office.

That's why Ericsson introduced the MD 110. The most advanced voice and data communication system available.

Its most advanced feature is that the Ericsson MD 110 is compatible with your current two wire system.

So, you can do without the cost of rewiring your entire office, or the disruption of workmen pulling up carpets and re-arranging furniture.

However, it's not the MD 110's only feature.

It's so advanced that unlike its competitors it doesn't have one centralized processor, but a separate one for each 200 extensions.

This ensures your entire system doesn't come to a halt if your processor does.

It's so advanced, it guarantees the future by allowing you to take immediate advantage of ISDN.

It's so advanced it grows from 80 to more than 13,000 users in a variety of locations.

Actually, the MD 110 is the most advanced way of having voice and data integration without disintegration.

For all information, phone Ericsson N.S.W. (02) 438 3999, Vic. (03) 480 4888, Qld. (07) 262 6222, S.A. (08) 212 7411, W.A. (09) 481 3677, A.C.T. (062) 57 1033, Tas. (003) 31 2544 now or send off the coupon today.

Please send me information on the Ericsson MD 110.
Send to: L.M. Ericsson Pty Ltd
61 Riggall Street, Broadmeadows, Vic. 3047

Name: ____________________
Address: ____________________
____________________ P/Code: ________
Tel: ____________________

Henderson Merrick Di Stefano/ER 320 R

RMIT report tips huge growth in EDI

By Noel Bennett

MELBOURNE — A recent report forecasts a dramatic surge in EDI within Australia — transactions doubling by the end of this year to 1 million, surging to 64 million by 1993 and 290 million by 2003.

The report also suggests that value of the EDI market will grow from $2.5 million by this year's end to $53 million by 1993, with revenues further projected to reach $100 million by 1998 and $140 million by 2003.

However, much would depend on co-operation between competitors, the report suggests.

The 200-page study on EDI in Australia has been completed by the Royal Melbourne Institute of Technology's Centre for Technology, Policy and Management.

According to the authors, Deborah Zinn and Paul Takac, EDI provides up-to-the-minute monitoring of production, sales and financial relationships between trading partners, allowing for fine tuning of inventory and sales levels to an unprecedented degree. This in turn leads to reduced administration costs and more flexible buying strategies.

Reduction in the administration costs can come from reduced clerical and postage costs for outgoing documents, no data entry for incoming documents, fewer data errors, a more efficient payment process and re-allocation of administrative tasks to more productive duties.

Also, within an organisation, EDI can lead to clear benefits relating to the effectiveness and efficiency of operational systems but at the same time can raise tricky business, planning and technology issues.

In terms of improved cash management techniques, the report argues that EDI will have a significant impact, reducing the amount of working capital required by business, and leading in turn to less money in the system and shorter trading cycles.

Other specific benefits will include more precise control over the timing of payments, improved credit control and less capital tied up in inventory.

However, all these advantages depend on co-operation. As the authors say: "This entails a clear business paradox in that while specific companies may wish to adopt EDI to gain a competitive edge, its biggests savings will come only when and if the maximum number of companies — who will often be competitors — are connected through the same or compatible networks.

"Given the competitive nature of the Australian industry, we have significant doubts regarding the willingness of companies to work with their traditional competitors.

"Nonetheless, this is crucial if such organisations are to benefit from the full gains of EDI implementation."

> ‘ *Effective allocation of resources and greater job satisfaction* ’

The authors also note: "Change is the fundamental dynamic underlying EDI. In conjunction with new management philosophies, EDI will require job restructuring. There will be a reallocation of clerical staff with some of the more menial tasks being taken over by the technology.

"This will, in turn, allow for the more effective allocation of resources and lead to greater job satisfaction."

However, EDI can be integrated with EFT (Electronic Funds Transfer) and the resulting discipline, EDI-EFT, can also lead to reductions in business operational costs and allow corporate treasurers to improve both their cash management procedures and renegotiation of payment terms.

The authors say EDI-EFT will lead to changes in the relationship between financial institutions and their customers, as these customers will experience significant reductions in the number of banking transactions as well as in the use and level of overdrafts and amounts held interest-free on low-interest accounts.

However, these changes would occur gradually, perhaps over a decade.

The report brings together the results of a year-long program of interviews with industry and government both in Australia and overseas. In addition, a survey of EDI developments was undertaken with some 170 organisations being originally contacted.

The report is available from the centre either by telephoning (03) 820 9014 or writing to the Director, CPTM, 425 St Kilda Rd, Melbourne 3004.

New Amex company

NEW YORK — American Express has formalised its move into providing high-volume processing and communications services with the creation of a new company.

American Express Information Services company (ISC) was formed from the information management businesses previously organised as the Data Based Services Group of American Express Travel Related Services Company.

Is your telephone system capable of handling twice the business?

A business with a Philips Sopho-S PABX can handle seven calls in the time it takes other PABX's to handle three. The Philips Sopho-S PABX is one of the fastest call handling telephone systems. This means less time waiting on for clients and more than double the business for you.

Every Philips Sopho-S PABX is tested twice too! Once at the factory and a second time in exactly the same configuration as you will use it, before it is delivered and installed. Plus every one of these systems transfers information via text, data, and image as well as voice.

All up, this means Philips Sopho-S PABX will increase your business and lower your telephone costs. To make doubly sure of this, or simply to find out more about a Philips Sopho-S PABX, call Philips in your state.

NSW (02) 805 4444, VIC (03) 235 6666, ACT (062) 68 3122, QLD (07) 844 0191, SA (08) 346 2666, WA (09) 277 4199.

PHILIPS

PHILIPS

PHL 5068

Computing and Communications.

From the company with the right solutions...

ALCATEL

STC AUSTRALIA

Alcatel is the world's largest manufacturer of Communications Systems.
From Computers, Cables and Power Systems to Public Network
Systems, Transmission Equipment and Telephones.

Sales and service throughout Australia:
Sydney: 925 7272, Canberra: 39 1266, Melbourne: 615 6666, Brisbane: 832 5511, Adelaide: 363 2555, Perth: 444 0211.

NO OTHER COMPUTER PLACES THIS

Our name was never meant to be just a clever play on the word "compact".

The first five letters of our name stand for one of our most important attributes.

Compatibility.

Compaq computers are designed to run all MS DOS software, which constitutes the world's largest business software library.

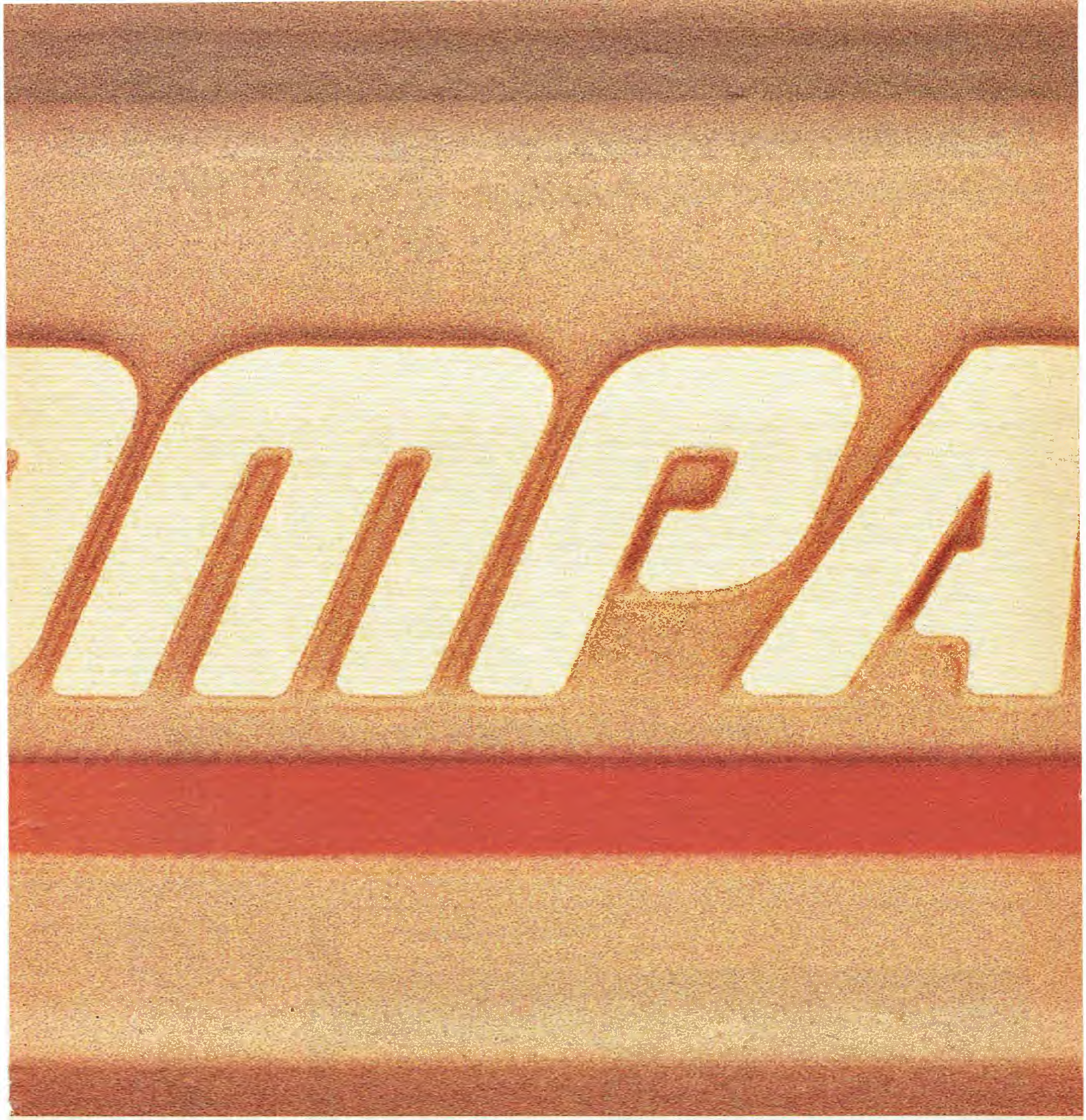
They also run Xenix and Unix operating systems and software. As well as the new MS OS/2. (In fact, MS OS/2 was developed on a Compaq.)

All Compaq desktop computers can have both 3½" and 5¼" diskette drives built in. So even our most advanced personal computers can still use old industry standard software.

And Compaq works closely with all major software houses to ensure future compatibility.

Compaq computers are compatible

Compaq is the registered trademark of Compaq Computer Corporation of the U.S.A. Australian subsidiary CCA Systems Pty. Ltd. 100 Harris Street, Pyrmont. NSW. 2009.



MUCH EMPHASIS ON COMPATIBILITY.

with a vast array of industry standard peripherals.

And all new Compaq products are designed to ensure compatibility with network systems, mini computers and mainframes.

Most likely you'll find the Compaq Computer Corporation will be extremely compatible with your company, too.

After just six years in business, Compaq now turns over $2 billion in PC sales.

Compaq entered the ranks of America's Fortune 500 in just four years – faster than any other company in history.

So like the products it makes, Compaq is ready for rapid expansion.

For more information, telephone (02) 660 0077 or (008) 225 286.

COMPAQ

Unix is a registered trademark of AT & T, MS DOS, MS OS/2 and Xenix are registered trademarks of Microsoft Corporation. Ball WCRS. COM 0026

Telecom switched on to corporate demands

By Noel Bennett

SYDNEY — Gone were the days when ISDN was considered to be a technology looking for an application, rather applications were now being trialled throughout Australia to take advantage of the technology's cost-effectiveness and efficiency, according to Val Kangsanant.

Speaking at an Atug/Telecom conference held on the day preceding Atug 89, Kangsanant said Telecom had long recognised that its corporate customers in particular, used telecommunications as a competitive business tool.

These corporate networks required the following characteristics — high performance in terms of reliability and security, flexibility to accommodate changing business needs and be customer specific. Other attributes required included potential for new business opportunities, to be "future proof" and to be cost effective.

Kangsanant, national manager, ISDN services, Telecom, said these requirements had been taken into account by Telecom when developing its ISDN strategy.

For example, corporate data, voice, image and text networking could be "custom-built" on the public ISDN network. Use could then be made of either switched call service, Timelink (extended call), semi-permanent dedicated line service or a combination of these services at any particular time to suit needs then present.

During a sales compaign, for example, the reconfigurable semi-permanent tie line could be reconfigured as a switched access to cope with incoming calls from the public and revert back to an in-house tie line to transmit sales data for analysis.

Kangsanant said availability of a switched call, Timelink and semi-permanent circuit options on the one Telecom ISDN installation allowed customers to eliminate spare capacity and have a flexible "customised" network when and where required.

In addition, ISDN tariffs were cost-effective as the flexible networking services were charged on a pay-as-you-go basis.

The alternative was to have a traditional, inflexible private network built on fixed point-to-point circuits with constant costs.

Further, five supplementary services available on Telecom's initial ISDN further enhanced corporate networking. For example, Calling Customer Identification (CCI) allowed call screening and authentication, useful in both voice and data applications, and it could also enhance telemarketing when combined with customer databases.

Another feature, intra-ISDN packet switching on the D channel, allowed many low-cost data applications such as EFTPOS and telemetry and also provided access to Austpac.

Cost and operational advantages of network rationalisation were achieved by integrated access. In effect, ISDN gave a single multi-purpose network to link in with other Telecom networks and services such as the Public Switched Telephone Network, Teletex, Viatel and Faxstream.

'Driven by Australian requirements,' says Val Kangsanant

ISDN applications which had been identified and some of which were being presently tested included digital corporate voice and data networking, access integration, network rationalisation, regional small branch networking with the use of Microlink and high-speed file transfer/software downloading.

Other applications included picture videotex, video applications, simultaneous voice and data transmission, money markets, telemarketing, PC networking, security applications and backup service.

Kangsanant said contrary to overseas experience, Telecom was introducing ISDN Macrolink, primary rate 2M-bits/sec access before Microlink or basic rate, 144K-bits/sec, driven by the different Australian market and requirements.

These differences revolved around Australia having a well-developed PABX market relative to overseas countries. Macrolink was most suitable for this PABX population.

However, Microlink services would be introduced a year after Macrolink was made commercially available next month.

An extra, not a replacement

SYDNEY — Customer research had revealed that customers with a critical dependence on communications tended to view ISDN as providing additional, rather than replacement capabilities, for their international networks, according to Chris Mutton.

The 64Kbit/sec on-demand service available in the first stage of international ISDN met "very real and immediate customers needs" and interconnect arrangements were now being established with other carriers, he said.

Mutton, manager, ISDN, OTC, said many customers saw the immediate application of the 64Kbit/sec service to improving resilience of their high-speed digital networks by providing economic backup and overflow.

The use of ISDN in this way was more immediately attractive in Australia than overseas as high-speed digital networking had only recently been introduced into Australian international networks.

The research also showed several customers emphasised the need to maintain service levels during peak loads and outages and to manage their cost/performance trade-offs for different applications over their networks, he said.

The primary customer focus for these applications was on business opportunities to realise competitive advantages rather than on network economy, Mutton said.

Ericsson Australia has world lead

By Brian McKay

MELBOURNE — Expertise in the development of a national ISDN network is being recognised on a global scale. Australia is leading the world with the introduction of the first national ISDN with full public access based on Ericsson technology.

As a result of this, Ericsson Australia will set up a world competence centre for ISDN. It will be established in Melbourne later this year and manned by more than 50 designers, engineers and computer scientists.

The Ericsson group will use the Australian centre to carry out product development for the standard facilities to be sold worldwide.

The company will spend $26 million on a capital expansion program at its Broadmeadows plant.

Australia took the lead in the ISDN race through its decision to develop the network to international CCITT standards and specifications.

The Ericsson AXE digital switching system, which is the backbone of the public telephone network, has been combined with ISDN to provide full integration of voice, data, text and image.

Ericsson has developed the product hardware and software for the eight ISDN-AXE exchanges in the six major capital cities.

The main elements include the development of:

- ☐ CCITT No. 7 signalling user part — the ISUP interchange — which allows the various AXE public exchanges to operate with each other in handling ISDN traffic.
- ☐ User part to interwork with Telecom Australia's existing telephone networks, such as data, text, voice image and video text.
- ☐ Interconnection between the AXE exchanges and private PABX systems — the connection of the Primary Rate Access (PRAC) to the exchanges.

The Primary Rate Access is of interest to medium and large-scale businesses and comprises a 30 B + D interface. This features 30 traffic-bearing channels with signalling at 64Kbits/sec.

When using a PABX that supports this interface, the subscribing company has transparent and full end-to-end digital communications with other similarly equipped companies.

● *Brian McKay is director, corporate relations with Ericsson Australia.*

Wandel & Goltermann
Electronic Measurement Technology

The new DA-20 is different. New style design, new features. Ready for ISDN, compact and versatile. The DA-20 is a go-anywhere unit for R&D, service, maintenance. For analysis, simulation, emulation, statistical evaluation and much more. Some other features: ★ data store handles online recording at up to 72 kbps FDX. ★ easy to use with auto-configure, postprocessing and device setups ★ remote controllable ★ big LC display ★ state programming.
If you are interested in learning more about the DA-20, just send off the coupon for detailed information.

Wandel & Goltermann Pty. Ltd., P.B. 419, World Trade Center, Victoria 3005, Tel. (03) 690 6700, Tlx. 34 801, FAX (03) 690 6750

☐ Please send DA-20 color brochure
☐ Please arrange for a sales engineer to call.

Name ....
Company ....
Street ....
Town ....
Telephone no. .... E 8428 K

Have you got an ISDN data analyzer that can cope with all your service, test and development needs?

Bringing the PABX package together

Connecting local terminals to host computers via the PABX, with dedicated cabling, with LANs and with data PABXs have been examined in detail in the past three issues of *Communications World*. In this concluding article, Stephen Coates compares these methodologies and discusses how they can be tied together.

DURING the past three decades, computers have been used widely in the commercial arena. As terminals became the norm for user access, a plethora of methodologies were devised for connecting them to the host computer or computers. Today, these can be classified broadly into five groups.

The use of the PABX was discussed in February's *Communications World*, local area networks and direct cabling were discussed in March and data PABXs (port selectors or matrix switches) were examined last month.

The fifth methodology broadly encompasses the use of concentrators or cluster controllers that connect to a number of co-located terminals and, with a single interface, to the host computer.

A number of computers, including most IBM computers, and most mainframes from the other suppliers, use this approach.

It suffers most of the restrictions of direct cabling except that few host ports are used and that greater distances and bit rates between the concentrator and computer can often be achieved.

Terminals connected to such concentrators cannot be used easily in a multi-vendor or even a mono-vendor multi-host computer site. No PABX or data PABX surveyed and available in Australia can perform the poll address translation necessary for these systems to be used realistically to connect terminals to various concentrators.

Conversion

Host computer support is important whatever methodology is chosen. Concentrators are effectively extensions of the host computer itself, and must either be sourced from the computer vendor or be plug compatible with units that are.

Local area networks are supported by most computer suppliers. Twelve of the 14 that responded to the LAN survey supported IEEE 802.2/802.3. Of these, eight supported TCP/IP, and seven supported IS 8473/8073 protocols. A local area network can be connected to any number of host computers, provided they all support the same protocol.

Some degree of protocol conversion is offered by several of the PABX models and one data PABX; Gandalf's Starmaster. But there are many more protocols than any of these units can convert. To simply connect to the many host computer models on the market, external stand-alone protocol converters are needed.

Provided these host connections can be made, switching and contention can be provided by LANs, PABXs and data PABXs. Neither direct cabling nor concentrators can do this.

Interfacing of local communication networks to wide-area networks is an involved topic in its own right. Of the five methodologies discussed herein, some data PABXs offer extensive wide-area networking facilities. PABXs do as well, but use bandwidth very inefficiently where data circuits are involved.

All sorts of routers and remote bridges can be used to provide wide-area networking from a LAN, although it is inherently a joining of two very different networking methodologies rather than a wide-area extension of the LAN.

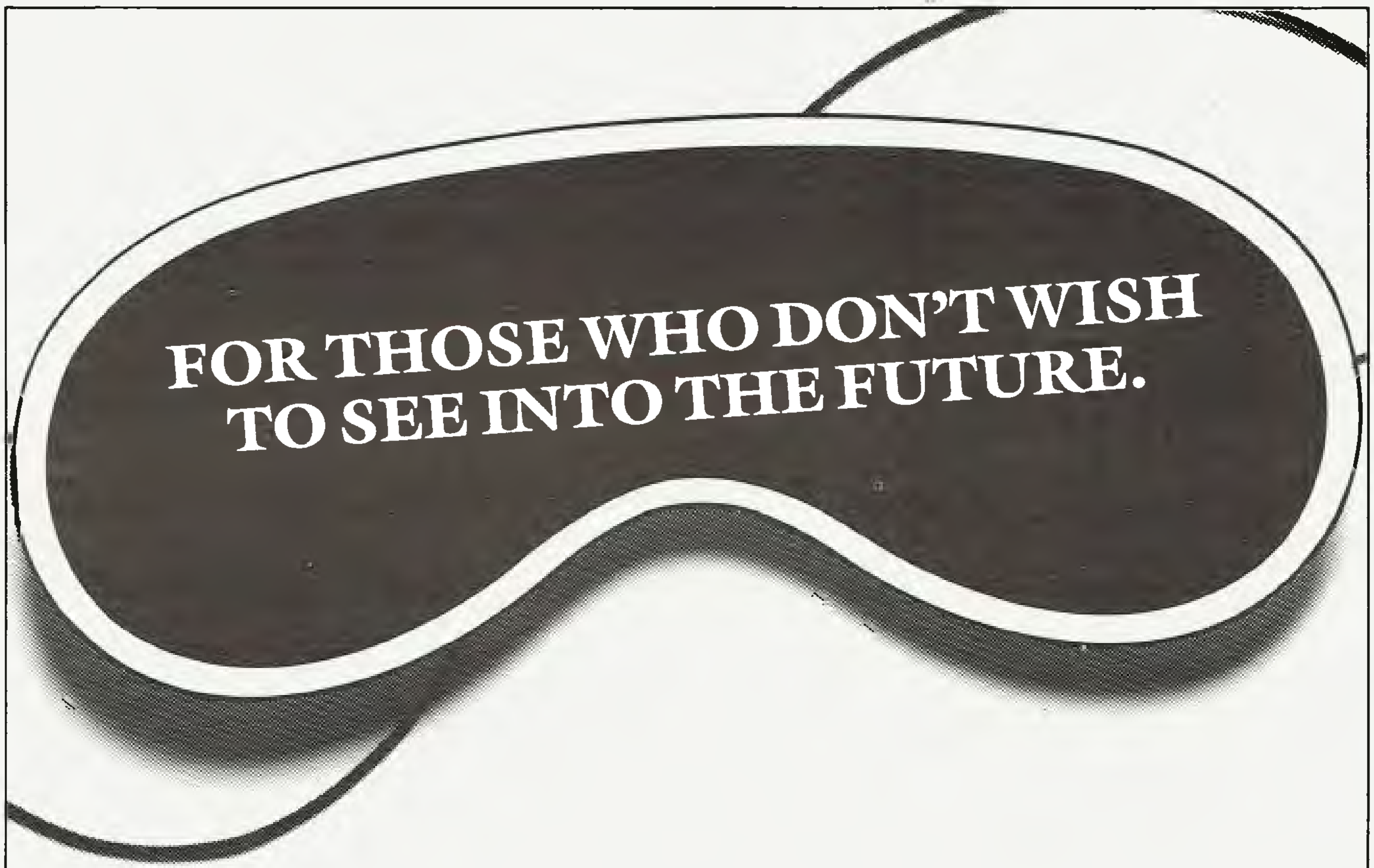
Both direct cabled and cluster controller connected terminals can be connected to a WAN, the former requiring multiplexers, but in both cases, the terminals are dedicated to the WAN.

Of course, the wide-area connections could be provided through the local host computer itself, but such an approach is inherently expensive and vendor dependent, and incompatible with a multi-vendor environment. One variation on this theme uses X.25. Local terminals can select between a local host computer and a wide-area network if they are directly cabled to a packet switch which has X.25 connections to both destinations.

For all the attractions of these various methodologies in the idealised scenarios their suppliers have painted for them, ultimately a methodology will have to be implemented in a customer's environment.

Most installations start out with direct cabling unless the vendor mandates the use of cluster controllers. By locating it in the computer room, the installation of a data PABX is a relatively simple matter.

(Continued page 14)


FOR THOSE WHO DON'T WISH TO SEE INTO THE FUTURE.

FOR THOSE WHO DO.

Visiting Communications 89 is like stepping into the next decade.

You'll see every conceivable breakthrough in Data communications, Radio and Telecommunications right through to the sophistication of Satellite technology.

This dynamic exhibition presents the innovations that determine how we communicate in the future. The latest equipment and systems, the products as well as a multitude of ancillary services and support.

Communications 89 has attracted the world's leaders in this field. Established and highly respected communictions' manufacturers, and suppliers in addition to a host of innovative new-comers.

The list of exhibitors reads like the "Who's Who" of communications.

You can see exciting new products and informative demonstrations. Even more importantly, you can speak with the industry's acknowledged experts, get hands-on experience, consider every option and compare quotes all in the one visit.

COMMUNICATIONS 89

If you only see one exhibition this year, see Communications 89. You haven't seen anything like it to date.

Royal Exhibition Building, Melbourne
6-9 June 1989
Tues-Thurs 10am-7pm Fri 10am-5pm

Ample on-site parking ★ Children under 18 not admitted. For further information and tickets contact:

aes
Australian Exhibition Services Pty Ltd Illoura Plaza 424 St Kilda Road Melbourne Vic 3004
Tel (03) 267 4500 Toll Free 008 33 5010 Fax (03) 267 7981

JWT RETAIL 4062P9037

TABLE 1 — COST COMPARISON

A total of 24 terminals are located in three groups of eight in the building.
At any time, no more than 16 require access to the host computer(s).

Methodology	Host computer interfaces (note 1)	Cabling to communications system (note 2)	Communications system	Permanent cabling (note 5)	Fly lead(s) (note 2)	Total
Direct cabling	790	50	—	220	50	1,110
Data through PABX	570	110 (note 3)	1,400 (note 6)	—	20	2,100
Local area network	—	—	1,030 (note 7)	100	50	1,180
Data PABX	570	30 (note 4)	550 (note 8)	220	50	1,420

NOTES:

1. The average cost of 24 RS232C asynchronous host interfaces is $18,900 or $790 per terminal. The average cost of 16 such interfaces is $13,660, or $570 per terminal (for 24 terminals).

2. 1 metre fly leads are assumed to cost $20 and 5 metre fly leads to cost $50.

3. This configuration will use 16 short PABX extensions costing $110 each and 16 5 metre fly leads at $50. The total of $2,560 is $110 per terminal, for the 24 terminals.

4. The data PABX configuration uses 16 5 metre fly leads at $50 each totalling $800 or $30 per terminal (24 terminals).

5. The average cost of an in-wall computer room to wall socket cable is $220. LAN cable averages $400 per point, and it is assumed that an average of four terminals are connected to each point.

6. Cost per terminal, excluding cabling *(Communications World, Feb 89)*.

7. Cost per terminal, excluding cabling *(Communications World, Mar 89)*. Host LAN interface cost has been excluded because it is either small, or comes standard with the computer.

8. Cost per terminal, excluding cabling *(Communications World, Apr 89)*.

Making it work for the client

(Continued from page 13)

Switching data through the PABX is also easily implemented unless its extensions are cabled with single pair cabling and the PABX requires two pairs for data. The proximity of the PABX to the computers is also a factor as a large volume of cable between them will be required.

Local-area networks can be the most difficult. Most high-rise office buildings have a core where a user can install a backbone cable. However, LANs require powered repeaters to be located close to the risers which, in some buildings, may be difficult to accommodate.

Both LAN terminal servers and cluster controllers need to be located close to the terminals to which they are connected. They are thus often located under desks or in corners with cables to the terminals not exactly hidden from view.

A data PABX using a distributed architecture will also require powered equipment to be located on the various floors of the building, although such a unit would not have to be close to the riser or to the terminals.

An issue related to its adaptability to existing environments is the communication system's flexibility and expandability.

Provided the backbone cable has been installed throughout the organisation's premise, a LAN is the most flexible methodology. Terminals, PCs and host computers can be added just about anywhere. A PABX is also fairly flexible. An analogue extension can be converted to a digital extension enabling a new terminal to be connected, although the analogue circuit then becomes redundant.

Data PABXs and direct cabling methodologies both require new cables to be installed, often at considerable expense, for new terminals to be connected.

Cluster controllers are potentially the least and most expandable and flexible.

To connect an additional terminal to an existing cluster controller with spare ports is quick, simple and inexpensive. If all ports are in use, however, an additional terminal will require a new cluster controller, a new cable back to the host and another host interface. Similar problems are encountered when a terminal needs to be relocated.

Terminals connected to one another in a cascade arrangement can be equally simple or difficult to expand or relocate.

A simple, yet significant issue is the distance, in terms of cable length, a terminal can be located from the computer.

LAN specification IEEE 802.2 specifies a maximum of three 500 metre segments using two repeaters between any two connected points. Fibre optic repeaters can add a kilometre to this limit.

PABX extensions, analogue or digital, can usually operate well beyond a kilometre. For both PABXs and local area networks, cable length is not a limiting factor.

Data PABXs tend to use the same terminal cable interfaces as the host computers themselves, and suffer the same distance restrictions. RS232C (V.24/V.28) has an official distance limitation of 15 metres, although this is usually stretched. Interfaces based upon RS422 — most suppliers have one — overcome this but, unless they are RS449/RS422, they are proprietary.

Cluster controllers can work as far away from the host computer as the computer to controller interface will permit. This varies.

Of the five local communications methodologies described, four provide a physical transport mechanism only. Only a local area network provides a communication system that is integrated with the host computer.

For simple PC to host communication, the PC can adapt to any of the five methodologies described although protocol-specific emulation boards are required if the PC is to connect to a cluster controller.

To provide all of those PC-specific functions — printer and software sharing, file servers and so on, and of course these are not always needed, a LAN is necessary.

Most of the popular PC-LAN operating systems such as Novell and 3Com can use either IEEE 802.2/802.3 (Ethernet) or 802.2/802.5 (token ring). Much of the PC-

(Continued page 17)

MODEMS TO GO!

MENU SPECIALS

Entree...

Avtek Mini Modem II **$179**
300/300. 1200/75. Suitable for Viatel, Bulletin Boards, etc. Complete with push-button phone.

Dessert...

A FREE 2-metre cable with every modem (please specify connectors).

Main Course...

Avtek MegaModem (internal & external). 3 flavours, all Hayes compatible with fully automatic operation.
Model 2123 – 300/300. 1200/75 **$325**
Model 12 – 300/300. 1200/1200 **$325**
Model 123 – 300/300. 1200/1200. 1200/75 **$399**

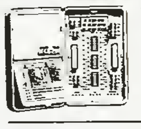
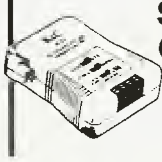
CALL NOW FOR OUR **FREE** 50—PAGE CATALOG OF DATA COMMUNICATIONS PRODUCTS

TECHNICAL SUPPORT IS JUST A PHONE CALL AWAY

CALL TOLL FREE 008-074499

P.O. Box 5438.
Bundall. Qld. 4214.
Fax (075) 396 503.

The CommsWare *Catalog*

DATACOMS — DON'T BUY BEFORE YOU TRY THESE

TRY OUR EVALUATION LOAN UNITS

DATACOM SCOPES

DS-300 MULTI-PROTOCOL

- real-time to 38.4 kbps (64 kbps with external clock)
- asynch, synch, BSC, HDLC, SDLC, X.25 (layers 2 & 3)
- ASCII, EBCDIC, HEX, IPARS, EBCD, Transcode
- CRC-16, CRC-CCITT, LRC and parity check
- 8 Line x 32 character, back-light display
- 128k capture buffer
- lead status display (TD, RD, RTS, CTS, DSR, CD etc.)
- full ASCII keyboard
- asynch/synch BERT/BLERT
- 2k send buffer.

DS-100 ASYNCHRONOUS

- real-time to 19.2 kbps full-duplex.
- built-in, break-out box.
- 4 line x 20 character display.
- lead status display — (TD,RD, RTS, CTS, DSR, CD etc.).
- BERT/BLERT
- 28k capture buffer.
- programmable simulation.

Common to each scope :

- dimensions 200 x 150 x 34mm.
- weight 0.9kg.
- internal battery and/or a.c. power.
- menu driven setup with help screen.
- auto configuration.
- built-in printer port.

K & C Technologies brand...
the price/performance pacesetters

BREAKOUT BOXES

- models for Serial and Centronics communications
- line and battery powered models
- pulse-trap options
- quick-cross patching (crossover switches)
- hard-shell case c/w cable and jumper leads

SERIAL & CURRENT-LOOP INTERFACE CONVERTERS

- RS-232C ⟷ RS-422/485
- RS-232C ⟷ 20/60 mA current-loop
- half and full duplex serial models
- power from serial interface or A.C. plug-pack

Electro Optics
Electro Optics Pty. Ltd.
84 Porters Road, P.O. Box 67
Kenthurst, N.S.W. 2156
PHONE (02) 654 1873
FAX (02) 654 1539

SENIOR EXECUTIVE APPOINTMENTS

TELECOMMUNICATIONS INDUSTRY

DIVISION & BRANCH HEADS

$68,409 & $58,297, *RESPECTIVELY*
PLUS EXPENSE OF OFFICE ALLOWANCE OF
$1,873 AND $1,126 *RESPECTIVELY*

Dynamic young thinking executives interested in furthering their careers in the telecommunications industry and in joining an organisation that will break new ground in the industry.

AUSTEL (the Australian Telecommunications Authority) which is to operate in Melbourne from 1 July 1989, seeks applications from suitably qualified achievers to fill its senior positions. Fixed term (3-5 year) career development opportunities are negotiable.

AUSTEL is to facilitate competition in the telecommunications industry and, through competition, growth and technical excellence in the interests of users and consumers.

AUSTEL is to be headed by a Chairperson and two members and will have a staff of approximately 70 and a budget of approximately $5.5m.

Division Heads are required to lead the Technical Regulation and the Industry Facilitation Divisions. Branch Heads are required to guide Branches responsible for Industry Standards, Compliance, Fairtrading, Market Environment, Carrier Affairs and a Secretariat.

The successful applicants will have experience in or knowledge of:-

- **the telecommunications industry;**
- **trade practices or consumer affairs; and/or**
- **the conduct of investigations and project management**

Relevant technical tertiary qualifications and/or qualifications in economics, law and/or accountancy are desirable.

Conditions of service include cumulative sick leave, long service leave after 10 years and a contributory superannuation scheme.

Relocation expenses and accommodation allowances may be payable in some circumstances. Motor vehicle allowances may also be negotiated for the two senior positions.

Copies of the duty statements and selection criteria for the positions may be obtained by telephoning (03) 611 3932.

If after you have read the selection criteria you want more information about the positions ring Robin Davey, Chairperson-Designate, AUSTEL on (03) 611 3942.

Your application must address the selection criteria. Unless reasons of confidentiality dictate otherwise, your application should be accompanied by reports by two referees with whom you have worked recently. Each referee's report must also address the selection criteria.

Applications should be addressed to The Director, AUSTEL Implementation Unit, PO Box 272, World Trade Centre, Melbourne, Victoria 3005.

Applications close on 18th May 1989.

AUSTEL is an equal opportunity employer.

AUSTRALIAN GOVERNMENT

Engineer Class 5

$47,364-$50,125

Australia Post invites applications from suitably qualified and experienced engineers for a challenging position located in the recently created Communications Network Policy Group at Australia Post Headquarters.

The successful applicant will be required to contribute at a senior level to the setting of policies relating to Australia Post's total telecommunications needs, both as a communications user and as a provider of Value Added telecommunications services.

Duties include development and oversight of policies to reduce the total telecommunications costs for the Corporation, assessment, planning and integration of communications networks for the total Australia Post needs, and provision of expert level technical advice on networking requirements and standards to support the mail service.

QUALIFICATIONS AND EXPERIENCE

A record of achievement in the planning and implementation of voice and/or data communications networks, together with the high level of interpersonal skills essential to be able to formulate policies and gain their acceptance by the senior management of the Corporation. Tertiary qualifications admitting to Graduate membership of the Institution of Engineers are essential.

CONDITIONS OF EMPLOYMENT

- Four Weeks annual leave
- Cumulative sick leave
- Long service leave after ten years service
- Comprehensive superannuation scheme

Enquiries may be directed to the Group Manager on (03) 669 7590.

Written applications quoting Position number 512 and including full name and address, date of birth, business and private telephone numbers, and relevant education and employment histories should be forwarded by the close of business on 1 June, 1989 to:

Manager, Corporate Services,
Australia Post,
P.O. Box 302,
Carlton South, Vic. 3053.
(Attention Manager, Headquarters Services Unit)

WE DELIVER.

Australia Post

Australia Post is an Equal Opportunity Employer. All applicants will be assessed on merit
Australia Post is a smoke-free work environment

arm11467

ALCAN

COMMUNICATIONS SPECIALIST

Alcan Australia Limited, a leading manufacturer and marketer of aluminium products, is seeking a communications specialist to join our Professional team in the Computer Services Division at Granville. Alcan has one of the largest Digital VAX Clusters in Australia and its communication network incorporates over 700 terminals and 100 communication boxes in wide area and local area networks, CATV and Ethernet.

Duties include:

- Direction of terminal, cable or communication boxes installation and maintenance.
- Overview of network administration.
- Planning and installation of computer room hardware.

Applicants must have a thorough understanding of the principles of computer communications in a business environment, experience in the installation and management of telecommunication networks and strong administrative and supervisory skills.

Alcan offers competitive salary package and conditions with benefits that include immediate contributory superannuation, credit union, canteen facilities and off-street parking.

Written applications providing details of education and experience, should be marked "Confidential" and addressed to:

Mrs C. Wells
Remuneration Administrator
ALCAN AUSTRALIA LIMITED
P.O. Box 12, Granville, NSW 2142

Alcan Australia Limited is an equal opportunity employer

CAA
CIVIL AVIATION AUTHORITY
AUSTRALIA

COMPUTER SYSTEMS OFFICER GRADE 3

$37,033-$39,897
(POS NO 2570)

The successful applicant will head up the Melbourne ADP Consultancy Section. The section comprises a small team of specialist staff responsible for providing a range of services to computer users in the Victoria/Tasmania Office of the CAA.

Major tasks include providing training to computer end-users, operating a medium-scale computer centre, co-ordinating provision, delivery and installation of computer equipment, small scale systems analysis and development, and operation of a help-desk service.

The successful applicant will require highly developed communications skills, and must have an appreciation of the qualities of a service-oriented position. Experience in development and presentation of training programmes is essential, and experience in systems analysis or computer operations is highly desirable.

For Technical Enquiries please telephone Mr Chris Brownbill (03) 667 2633.

To be eligible for appointment, it is expected that applicants would be Australian Citizens. However, applicants who have permanent residence status may be offered appointment on probation pending the granting of citizenship.

To obtain a Job Specification and Selection Criteria for the above position please telephone (03) 667 2299. Written application giving full details of qualifications and experience should be forwarded by 31 May 1989 to:

The Recruitment Officer
Civil Aviation Authority
GPO Box 1733P
MELBOURNE VIC 3001

The Civil Aviation Authority is a semi-commercial Statutory Authority staffed under the Public Service Act.

AN EQUAL OPPORTUNITY EMPLOYER

CAA 33

Information Systems Opportunities

Plessey Australia is a major manufacturer of electronic communication and underwater sensing equipment and systems for Australia's defence capability and we have been progressively introducing new computing hardware and systems to support our Financial and Manufacturing Groups.

Opportunities exist in our Information Systems Group for personnel to fulfil the following positions:

SYSTEMS ADMINISTRATOR

This position will ideally suit a Senior Computer Operator with supervisory skills and HP 3000 experience who wishes to maintain a hands-on role.

The System Administrator will initially manage the day-to-day operation of our MM 3000 manufacturing system, however, we will be providing cross training on other equipment and systems.

ANALYST PROGRAMMER

We require an Analyst Programmer to primarily support and further develop our Corporate Financial System operating on VAX hardware.

Your 2-5 years COBOL programming experience with formal computing qualifications and possibly a knowledge of 4GL and/or DBMS application generation would identify you as the person we are seeking for this recently created position.

For further information, please telephone Brian White, Personnel Manager, on 807 0400.

Written applications providing brief career details should be forwarded to.

PERSONNEL MANAGER
Plessey Australia Pty Limited
Railway Road
MEADOWBANK 2114

An Equal Opportunity Employer.

PLESSEY

34282

Comparing the cost of each methodology

(Continued from page 14)

LAN fanfare is centred on token ring LANs, but most mini and mainframe computers support 802.2/802.3.

For an organisation using a significant number of PCs and requiring a LAN for them, an 802.2/802.3 LAN for both this application and terminal to host connectivity has obvious attractions.

As an alternative, the Gandalf Starmaster data PABX and LM Ericsson MD110 PABX do contain some element of MS-DOS PC functionality that is available to the terminal user.

Table 1 gives an averaged cost comparison for four of the five methodologies discussed. While these costs are fairly computer vendor independent, the cost of a cluster controller based configuration would be highly vendor dependent. And not all vendors offer this option.

The scenario on which the comparison is based involves 24 asynchronous terminals in three groups of eight located in a "standard" office. At any one time, no more than 16 of these terminals will be active.

Clearly, using the PABX for local data distribution is the most expensive methodology, which is probably why very few organisations in Australia use it.

Local area networks and direct local cabling appear to be the least expensive although a number of parameters would vary from one site to another. Data PABX costs are in between.

Proponents of any of these methodologies will, of course, describe situations in which their method is "obviously" the best. This underscores the need to assess each application carefully and individually.

The one exception arises when a user has a computer that all but requires its terminals to be connected to its cluster controllers.

	PERMANENT IN-WALL CABLING	CLUSTER CONTROLLERS	DATA THROUGH THE PABX	LOCAL AREA NETWORK
Cluster controllers	This interconnection depends entirely upon the terminal interfaces on the cluster controller. As cluster controllers tend to be located in proximity to groups of terminals, such cabling tends to be local, and often loose.			
Data through PABX	Some PABXs offer interfaces on the PABX unit itself to which local cabling can be connected. But if the terminal is connected to a system integral handset, local in-wall data cabling is not necessary.	If the cluster controller to computer interface is supported by the PABX, a PABX may be used to interconnect the two, although the PABX would be providing the physical transport only. Conversely, if the cluster controller to terminal interface is supported by the PABX, a PABX can be used to connect these together. In this case, the cluster controller would function as a front-end processor.		
Local area network	As with PABXs, LANS are designed to eliminate the need for local in-wall data cabling. However, as LAN cabling is relatively inflexible and LAN connections are expensive, it is common to install a LAN as a backbone and provide local connections to it with in-wall data cabling.	If the cluster controller to computer interface is supported by the LAN, a LAN may be used to interconnect the two, although the PABX would be providing the physical transport only.	Once a PABX supplier offers an integral IEEE 802.2/802.3 interface, the PABX will be able to offer terminal to LAN connectivity.	
Data PABX	In-wall data cabling is required to connect the terminals to the data PABX. A distributed data PABX will shorten the length of the cable runs required.	If the cluster controller to terminal interface is supported by the data PABX, a data PABX can be used to connect these together. In this case, the cluster controller would function as a front-end processor.	As these two technologies are functionally the same, there is no reason to interconnect them.	An integral IEEE 802.2/802.3 interface is offered with one data PABX and planned by the suppliers of two others. A data PABX can thus interconnect terminals to a local area network.

This table examines the technical requirements of, and rationale for, the interconnection of the five local communication methodologies discussed in this article.

Whilst an 8.5 second standing quarter mile may not be exactly what you'd expect from your personal computer, optimum performance, speed and flexibility certainly are.

Today's high performance personal computers demand high performance LAN controller cards.

The new ISOLAN AT and MCA Controller cards offer this performance, by utilizing the latest design technology.

This eliminates bottlenecks and guarantees information transfer between workstations at speeds approaching the throughput of the computer itself.

In fact, recent independent tests recorded speeds in excess of 500 Kbytes per second for single station, and 1050 Kbytes per second for file server throughput.

Simply, ISOLAN PC Cards are the fastest cards available, over any distance.

Unleash your PC's potential.

Contact MM Data Networks today.

ADM COMMUNICATIONS ADN 413

NOW, ISOLAN UNLEASHES THE POTENTIAL OF YOUR LAN PC'S

MM DATA NETWORKS. A DIVISION OF METAL MANUFACTURES LIMITED
4-10 BRIDGE STREET, PYMBLE, NSW 2073. TELEPHONE: (02) 488 8799
AND IN NEW ZEALAND, 3RD FLOOR, 127-131 NEWTON ROAD, AUCKLAND, N.Z. TELEPHONE (09) 77 2760

DATA NETWORKS

ISOLAN

Don't choose the house to match your curtains

By Joe Mohen

IT IS incredible to me that systems analysts today are actually making choices about which high layer protocols to design new applications with, based upon what sort of cable is already in the walls. This is like choosing which new house you buy by whether the interior paint matches your curtains. It is plain stupid. But that is what is happening.

In VTAM networks, this often happens due to ignorance. Most designers would choose Logical Unit 6.2 instead of terminal emulation for new micro-to-mainframe applications if that were possible, but believe it not possible for coax-attached personal computers. There are those who believe that a PC attached to a cluster controller by coaxial cable is only able to run Logical Unit 2 (i.e. 3270). This is fantasy.

The real truth is that Logical Unit protocols are independent of the media. And it is especially important now that we know the truth because, like it or not, we will be stuck with large amounts of coaxial cable for a long time.

In the 1970s IBM made the decision that its workstations would not be connected to their mainframes directly, but rather through cluster controllers, a type of concentrator, which would also offload some of the rudimentary terminal management functions from the host. IBM chooses to use RG-62A/U coaxial cable, very similar to the media used by cable television, to attach its terminals to its 3274 cluster controllers. It seemed a good choice. When used properly with BNC connectors, the media was practically impervious to noise.

Coax cables

The terminals of the 1970s were typically unintelligent, they could do almost no processing on their own. Hence a crude character-oriented, send one keystroke at a time protocol was devised to exchange information between the terminal and the cluster controller over coax. This crude protocol was known as Control Unit Terminal or CUT.

So 3270 terminals and coax cables got the job done. They proliferated everywhere, until nearly every office building had coax coming out of every orifice.

Today, it is preferable to wire new buildings with other kinds of cable.

The start of this decade brought two radical changes — the inexpensive microcomputer, and the local-area network. As users with prestige began to replace their CRTs with PCs, it was desirable to allow the new workstations to emulate 3270 displays. The market responded with the IRMA board. For only $US1,000, one could reduce a PC down to the level of a 3278.

While I was among the first to applaud those who loaded host data into their Lotus spreadsheet with the earliest download programs that used CUT, the programming interface of the CUT mode IRMA was far from ideal. Programmers hated it. Data to be transmitted between the micro and the mainframe had to be exchanged in a screen buffer.

This limited logical record sizes to the length of a screen. This technique was not conducive to sending binary data either, since binary data could be confused with 3270 orders.

Obviously, Advanced Program to Program Communications (APPC) could not work with CUT. Data has to be sent upward one keystroke at a time.

What is wrong with CUT is that one can never be 100 per cent certain of what state the program is in. Your program has to look at the screen buffer to see if the clock symbol and the word "system" have gone away to determine if you are allowed to send data.

It is impossible to predict every possible error that can occur. Therefore, micro-mainframe applications based on CUT are relatively unreliable.

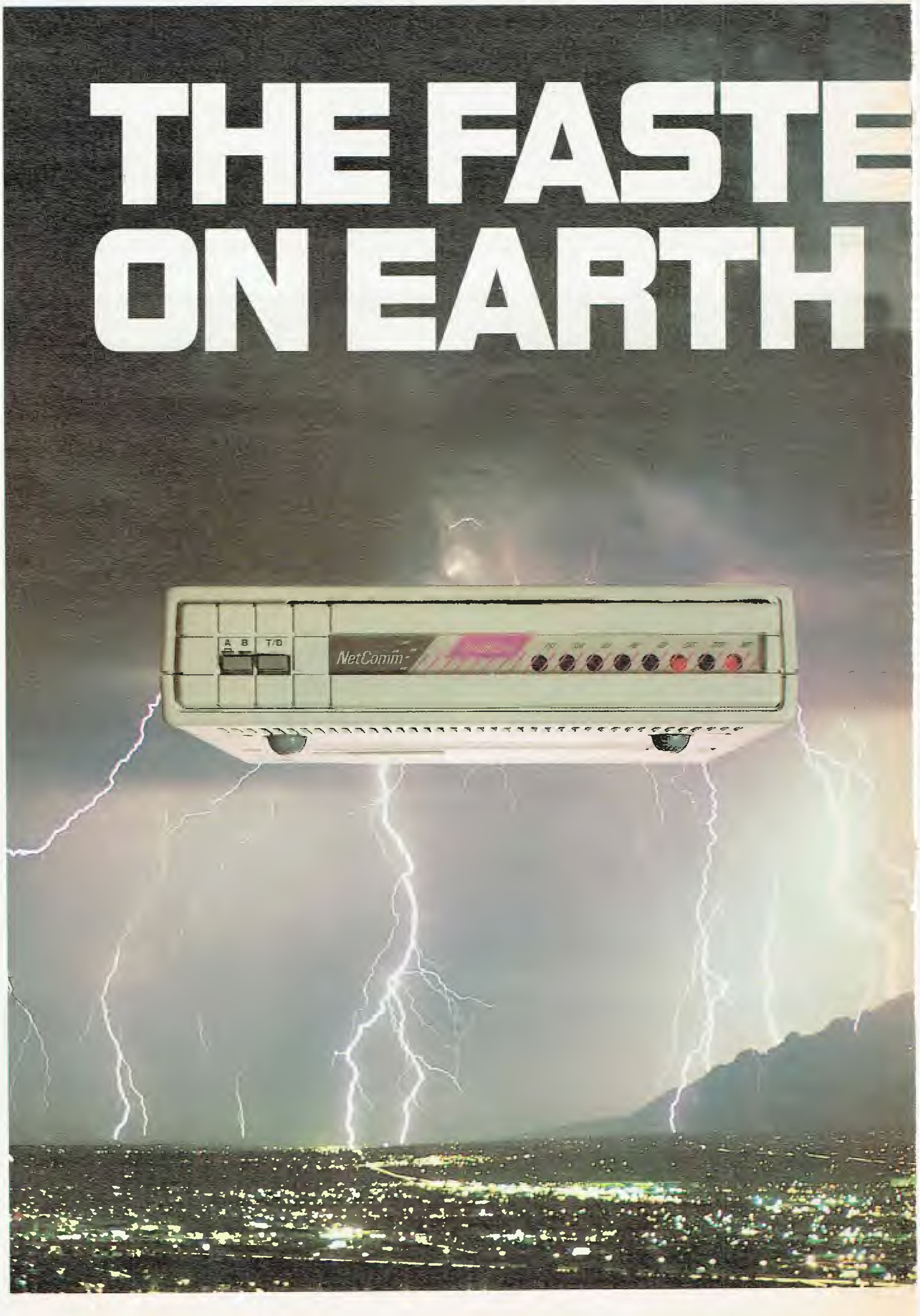
IBM knew CUT was obsolete, so Distributed Function Terminal (DFT) was introduced, and by 1984 was widely accepted. Intended to take the place of CUT, DFT is a more intelligent protocol that actually allows SNA Path Information Units to be passed through the cluster controller directly to the PC. User data is not molested by the 3274. This was a major improvement. The SNA logical unit resided in the PC itself, instead of in the cluster controller.

While anything had to be an improvement over CUT, 3270 DFT still falls short of meeting the needs of today's micro-to-mainframe applications. It still offers no data transparency, remains burdened with the overhead of device control, and completely precludes the PC from having a session with non-host nodes elsewhere in the VTAM network.

Logical Unit 6.2 would offer a much simpler programming interface, lower transmission overhead, and the symmetrical error recovery dictated in any distributed application.

Now the technological base existed for building more intelligent micro-to-mainframe applications. Since the PC itself was a processor, new PC-to-host applications were inherently process-to-process, different from

(Continued page 19)



Jtec rides Telecom ISDN wave

■ Charles Twist . . . ISDN 'looked like an interesting technology'

By Noel Bennett

SYDNEY — Jtec Pty Ltd is riding on the wave of Telecom's ISDN service by developing products specifically for this market sector.

Jtec was formed three years ago, funded by a Management Investment Company (MIC).

The objective of the founders, some of whom had previously worked with AWA and who had very broad experience in telecommunications, was to look for new business opportunities, said director, Charles Twist.

At the time, ISDN looked like an "interesting" technology and as Australia was taking a forward-looking position, the company decided to participate in this particular area, Twist said.

Initially, Jtec began developing a terminal to handle basic rate (Microlink) ISDN, which Telecom decided to delay until primary rate (Macrolink) applications were up and running.

Accordingly, Jtec developed a primary rate multiplexer in conjunction with Telecom, which the carrier is now marketing as Macrospan 1000. This product competes with those supplied by Scitec and JN Almgren as well as a number of imported products. Macrospan 1000 is said to be a modular solution for connecting up to 30 devices equipped for analogue or digitial communications, 15 devices equipped for ISDN Microlink applications, or a combination of these.

Telecom says the product lends itself to applications such as private networks, PABX front end, money market, data networks, voice networks and facsimile networks.

Jtec has developed other products, including the J2000 ISDN basic rate multi-service terminal, the J2020 multi-service communications adaptor and the J3020 ISDN basic rate personal computer terminal adaptor.

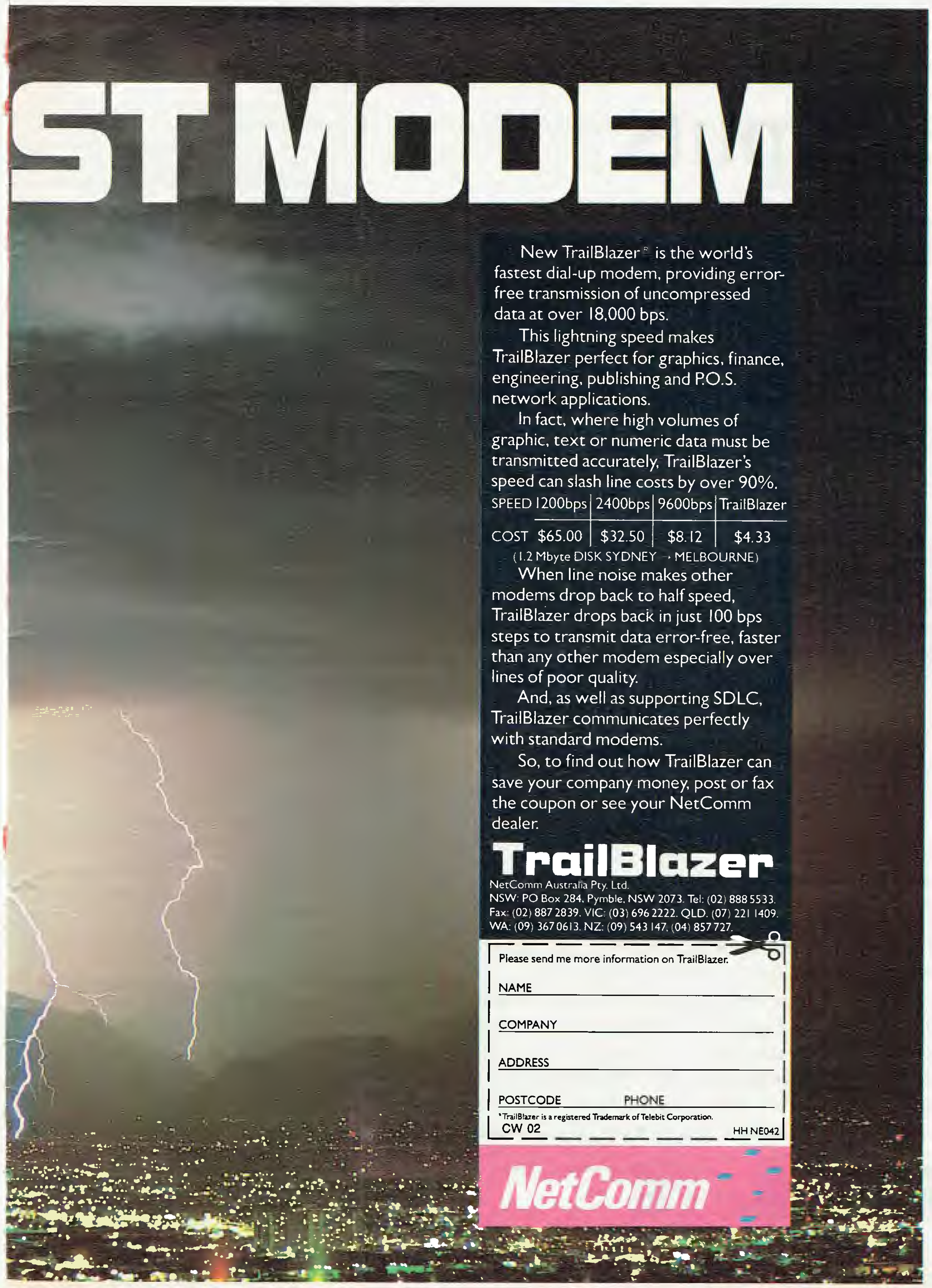
Twist said there was enormous interest in the J2000, aimed initially at branch offices of large businesses, and a number of export opportunities had opened up for all three products.

Jtec has initiated ISDN product development programs, open to network operators. Interested operators will be invited on a "Commercial in confidence" basis to review preliminary product specifications.

Those choosing to continue with the program will then become parties to the project. Each participant can specify changes to meet local requirements and carry out prototype evaluation on their own networks.

Jtec believes participating operators will obtain solutions to their ISDN needs promptly and at reduced costs.

Jtec also provides advisory and consultancy services to subscribers investigating ISDN solutions for voice, data and facsimile communications needs.



ST MODEM

New TrailBlazer* is the world's fastest dial-up modem, providing error-free transmission of uncompressed data at over 18,000 bps.

This lightning speed makes TrailBlazer perfect for graphics, finance, engineering, publishing and P.O.S. network applications.

In fact, where high volumes of graphic, text or numeric data must be transmitted accurately, TrailBlazer's speed can slash line costs by over 90%.

SPEED	1200bps	2400bps	9600bps	TrailBlazer
COST	$65.00	$32.50	$8.12	$4.33

(1.2 Mbyte DISK SYDNEY → MELBOURNE)

When line noise makes other modems drop back to half speed, TrailBlazer drops back in just 100 bps steps to transmit data error-free, faster than any other modem especially over lines of poor quality.

And, as well as supporting SDLC, TrailBlazer communicates perfectly with standard modems.

So, to find out how TrailBlazer can save your company money, post or fax the coupon or see your NetComm dealer.

TrailBlazer

NetComm Australia Pty. Ltd.
NSW: PO Box 284, Pymble, NSW 2073. Tel: (02) 888 5533.
Fax: (02) 887 2839. VIC: (03) 696 2222. QLD. (07) 221 1409.
WA: (09) 367 0613. NZ: (09) 543 147, (04) 857 727.

Please send me more information on TrailBlazer.

NAME

COMPANY

ADDRESS

POSTCODE PHONE

*TrailBlazer is a registered Trademark of Telebit Corporation.

CW 02 HH NE042

NetComm

Don't match the curtains

(Continued from page 18)

the older process-to-terminal. This dictated use of peer protocols such as LU 6.2, instead of older device oriented protocols like LU 2 (i.e. 3270). And since the cluster controller no longer implements the LU, the LU type became transparent to the cluster controller.

Actually, not everyone ignored DFT. In 1987, a very innovative Californian company, Network Software Associates, began selling an APPC programming interface for coax attached devices which supports all seven major DFT coax boards then on the market.

Because with the NSA product, the media, whether it be twisted pair or coax or internal modems or whatever, is transparent to the application program. Isn't that what we have all been asking for all along?

I do not advocate the installation of coaxial cable in new buildings. Indeed the consensus is that new buildings should be wired with twisted pair or fibre optic cable that can accommodate strategic local-area networks or ISDN.

Yet coax will remain with us for many years too — it is not economical to rewire every building so soon. So application designers would be wise to take heed that new applications should be able to run over any of these media. Our best tool, LU 6.2, does indeed work over all those media. Use it. It matches the curtains.

● *Joe Mohen is a leading US communications specialist who works for Spectrum Concepts.*

Industry

Hungry Comco spreads news, finance web

By Noel Bennett

SYDNEY — AAP Reuters Communications, now operating under the trading name of Comco Communications, is rapidly diversifying to expand its revenue base.

Before 1984, AAP Information Services and Reuters, the world's largest provider of news and financial information, had provided a variety of financial and general news services in Australia.

During that year, AAP decided to launch its own communications company, AAP Reuters Communications, to be able to fulfil its own special needs better, diversify its networks and contain rising costs.

The new communications company designed and installed a range of data, voice and information networks, based on both terrestrial and satellite links and using its own metropolitan area Microwave Multipoint Distribution Systems (MDS) for delivering high-speed data directly into its customers' offices.

In short, Comco can draw upon a wealth of communications experience and a high-level of in-house expertise besides having one of the largest private VAS networks in Australia.

Accordingly, in these days of booming communications demands and the liberalisation, to a certain degree, of the communications market, it is not surprising that Comco is diversifying to take advantage of the new opportunities.

Or, in the words of Barney Blundell, general manager: "We are moving away from depending so much on our major private network business by broadening our product range and client base."

Although the company is diversifying in many directions, each of the new ventures builds upon former activities.

Blundell is a veteran of the telecommunications "wars" between Telecom and the private sector, both in his capacity as general manager of Comco and also as a corporate member of the Australian Telecommunications Users Group. These disputes have principally covered the grey areas of VAS and interconnect policies.

According to Blundell, Comco is now concentrating on three main areas:

☐ Provision of satellite and microwave networks

☐ Marketing, installation and maintenance of end-user equipment complementary to networks

☐ Designing and implementing "intelligent" buildings

The opportunities for providing new networks for clients depend in part on the outcome of the present legislation before Federal Government, the opinions of Austel and perhaps, deliberations by the Trade Practices Commission.

Another area which Comco would like to enter is the delivery of pay TV via MDS networks which will also depend on decisions by the Federal Government.

The satellite and microwave networks, both MDS and Point-to-Point, supplied by Comco incorporate equipment which has been designed and some of which is manufactured in Australia.

Security systems

For example, the MDS equipment has been designed in conjunction with Mitec in Queensland and is manufactured in Australia. Other equipment designed in Australia includes aerials, microwave frequency down-converters, intra-building splitters, audio demodulators and low-power MDS repeater/transmitters.

Blundell said a 31-channel down-converter was now being manufactured in the US under licence to Comco.

Other equipment being supplied includes products for satellite voice messaging, videoconferencing and electronic signs. Comco has also become an agent for small to medium PABXs supplied by GEC Plessey Telecommunications.

Besides designing communication paths and installing the wiring and equipment for intelligent buildings, Comco can also handle security systems, based on a new radio-based alarm device.

Blundell said Comco could supply a total service for the building owner covering design, supply and maintenance.

A natural consequence had been the move into facilities management whereby Comco takes on the responsibility of all aspects of telecommunications for a customer company, including day-to-day operations.

This has taken Comco into bidding for the opportunity to design and operate a network for both the NSW and West Australian governments.

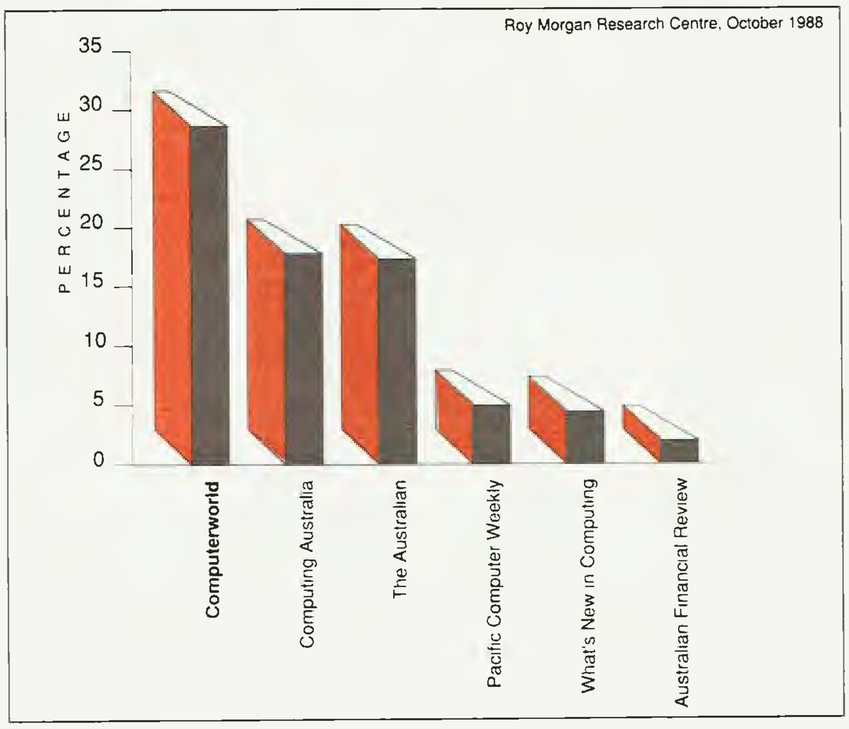
Such moves tie in with Comco's moving into consultancy services.

Again, the development of a maintenance business as a potential for greater revenues is based on Comco's experience with its AAP and Reuters client base.

Comco has expanded in New Zealand and has been successful in obtaining its largest single order for its Aspen voice messaging systems. The deal, worth more than $A1 million, was with New Zealand Telecom. Comco is the sole distributor of Aspen products in the region.

Computerworld again puts competitors in their place

No. 3 of a series



Which computer publication has the most up-to-date news?

Australia's most important and authoritative survey of readership of computer publications conducted by The Roy Morgan Research Centre each two years has just been released. Interviews were conducted with the most senior managers of information systems and data processing managers of companies drawn from Australia's top 500, plus government departments.

The survey examined which publications were read by MIS/DP and why; purchasing power of MIS/DP; and their demographics.

For further details of The Roy Morgan Research Centre Survey of Readership of Computer Publications by Australia's top MIS/DP Management call Gayle McElroy (02) 439 5133; Terry Swan (03) 790 2533; Winkie Corfield (09) 388 1828; Jane Fewings (07) 378 4522.

Computerworld AUSTRALIA

Essential for High Flyers